

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of)
)
Amendment of Part 95 of the)
Commission's Rules to) WT Docket No. 95-102
Establish a Very Short Distance)
Two-way Voice Radio Service)

REQUEST FOR CLARIFICATION

Pursuant to Section 1.2 of the Commission's Rules, Motorola hereby seeks clarification of the FCC's *Report and Order* that established a very short distance, unlicensed, two-way voice personal radio service called the Family Radio Service (FRS).¹ Specifically, Motorola seeks clarification that antennas on Family Radio Service devices must be non-detachable in order to satisfy the Commission's requirement that such antennas be "integral" to the Family Radio Service unit. Such a ruling would ensure that FRS devices are being manufactured consistent with the Commission's rules and eliminate potential sources of interference.

I. INTRODUCTION

FRS was developed to address a growing need for direct, short range, personal communications capability through affordable palm-size units. The units serve a narrow market niche by:

¹ *Report and Order*, WT Docket No. 95-102, 11 FCC Rcd 12977, (May 15, 1996) ("*Report and Order*").

- Enhancing public and personal safety and service to individuals, including individuals with disabilities and parents wanting to keep in touch with their children.
- Enabling families and other small groups to communicate with each other while running errands and taking part in recreational and other activities.
- Providing more communications choices for American consumers.
- Creating new jobs.²

In the light of these public interest benefits, the Commission correctly decided to implement FRS on frequencies in the 460 MHz range. However, in order to avoid disruption or interference with existing General Mobile Radio Service ("GMRS") systems, FRS units were to "use only a small fraction of the transmitter power that GMRS stations are authorized to use" and "use a small and relatively inefficient antenna."³ However, these safeguards, in particular the requirement that units have a limited range antenna, need clarification so that manufacturers understand what manner of antenna is acceptable under the Commission's rules. As further explained below, the Commission's rules have been liberally interpreted resulting in FRS products with radically different antennas -- some detachable, some permanent. The detachable antennas can easily be altered by consumers to strengthen the FRS signal and, in turn, interfere with GMRS systems.

Therefore, Motorola urges the Commission to rectify any ambiguity regarding the proper type of FRS antenna and ensure interference free use of FRS units by clarifying that all FRS antennas must be permanently attached to the unit.

² *Report and Order* at 3.

II. DISCUSSION

In establishing FRS, the Commission attempted to balance the need for a new, convenient, unregulated consumer-based communications service with the need to avoid interference with existing services. Section 95.647 of the Commission's rules states that "[t]he antenna of each FRS unit, and the antenna of each R/C station transmitting in the 72-76 MHz band, must be an integral part of the transmitter."⁴ Similarly, Section 95.194 prohibits FRS users, without exception, from attaching any antenna, power amplifier, or other apparatus to an FRS unit that has not been FCC certified as part of that FRS unit.⁵ These two rules were designed to promote one of the Commission's "primary objectives" in setting technical standards for FRS – to ensure that FRS units do not cause interference with other services.

The plain language of the rules is clear – supplemental antennas should not be attached to FRS units. However, certain manufacturers are improperly taking advantage of the fact that the FCC rules do not explicitly prohibit the manufacture of FRS units with detachable antennas. These manufacturers do so despite the fact that the word "integral"⁶ clearly illustrates the

³ (...Continued)
Report and Order at 4.

⁴ 47 C.F.R. § 95.647.

⁵ 47 C.F.R. § 95.194(c).

⁶ The use of detachable antennas in FRS units is contrary to the plain meaning of the term "integral." A widely used and generally accepted definition of the word integral is "essential or necessary for completeness." American Heritage Dictionary, Second College Edition (1991). Detachable antennas by their very nature are neither essential nor necessary for a complete FRS system.

Commission's intent that FRS antennas cannot be exchanged or removed. There are several units in the marketplace with detachable antennas. Those discovered by Motorola include: the Cobra FRS-200 by Cobra, the Cherokee FR-465 by Wireless Marketing and the Maxon FRS-114 by Maxon. In fact, one advertisement for the Maxon product boasts that the FRS-114 has a "Screw-in Rubber Duck antenna."⁷

The Commission must prohibit the production of FRS units with detachable antennas because the sale of these units is a tacit invitation for abuse of the Commission's rules. Earlier in this proceeding, the Personal Radio Steering Group, Inc., noted that power amplifiers are readily available for the FRS frequency range and are lawfully used on the adjacent channels allocated to the GMRS service.⁸ Therefore, the Commission cannot realistically ban their production or sale, as it does with amplifiers for transmitters in and near the 27 MHz CB band. Thus, FRS units with detachable antennas will be susceptible to alteration by hackers, radio enthusiasts and individuals that are unwilling to obtain a GMRS license in order to operate more powerful units. Of course, the FCC's limited enforcement resources would make it extremely difficult to enforce the prohibition against external FRS antennas "in the field."

These facts make it critical for the Commission to take adequate steps to prohibit any easy means of FRS antenna modification. Motorola believes that in order to reliably safeguard against abuse, antennas must be built into any radio transmitting apparatus marketed to

⁷ See <http://www.eskimo.com/~antenna/frs114.html>. A copy of the advertisement is attached as Exhibit A.

⁸ See Comments of the Personal Radio Steering Group, Inc., WT Docket 95-102 (filed Oct. 2, 1995).

consumers for unlicensed FRS operation. Consistent with the request for clarification sought herein, Motorola recommends that the Commission modify Section 95.647 of its rules to read as follows:

The antenna of each FRS unit, and the antenna of each R/C station transmitting in the 72-76 MHz band, must be permanently attached to the transmitter. The antenna must have no gain (as compared to a half-wave dipole) and must be vertically polarized.

Explicitly interpreting the word “integral” to contemplate only non-detachable antennas is consistent with Commission precedent. The Commission uses the term “integral” several times in its rules when discussing antennas. In each of these instances, the word appears to mean non-detachable.⁹ For example, in deciding to amend of parts 0, 1, 2, and 95 of its rules to provide Interactive Video and Data Services (“IVDS”) the Commission adopted a proposal that is quite instructive on the proper interpretation of the word “integral.” While contemplating IVDS implementation, the Commission was determined to ensure that “IVDS systems not cause interference to other services.”¹⁰ To this end, the Commission established an “integral antenna requirement” over the objections of parties who believed that such a requirement could, in some instances, unnecessarily restrict IVDS operations. The Commission arrived at its decision because it reasoned that “the unrestricted ability to readily connect the RTU to an *exterior*

⁹ See 47 C.F.R. § 2.993(b)(3) (“antenna is an integral part of, and *attached* directly to transmitter.”) (emphasis added). See also 47 C.F.R. §§ 15.407(d), 80.1057(c), 90.269(a)(3) and 95.1013(c)(3).

¹⁰ Amendment of Parts 0, 1, 2, and 95 of the Commission's Rules to Provide Interactive Video and Data Services, 7 FCC Rcd 1630 ¶ 37 (released February 16, 1992).

antenna could lead to instances of possible interference.”¹¹ The Commission’s use of the word “exterior” suggests that attachable antennas do not qualify as “integral.”

The IVDS decision is helpful both for a general understanding of how the Commission defines the word “integral” and, perhaps more significantly, how it is applied to consumers. In the IVDS decision the Commission also realized that the likelihood of individual consumers changing the antennas on RTU units was very high. Therefore, it required that “all RTUs marketed to and installed by an individual IVDS subscriber include an integral antenna.”¹² RTUs that use *exterior* antennas were permitted only if installed by the IVDS system operator in connection to a master antenna system. This requirement likely arose because there is very little the Commission can do to prevent unauthorized individual use of certain pieces of equipment unless structural barriers are put into place at the point of manufacture. As explained above, the same is true with FRS.

¹¹ 7 FCC Rcd 1630 ¶ 37.

¹² *Id.*

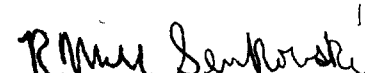
III. CONCLUSION

For the reasons set out above, the Commission should clarify that FRS antennas must be non-detachable and modify Section 95.647 of its rules to reflect this clarification.

Respectfully submitted,



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